Rock Island Arsenal Continuous Improvement in Safety Performance

Jerry Golden
Chief, Safety Office
goldenj@ria.army.mil

One Team…One Fight…One Goal!!!

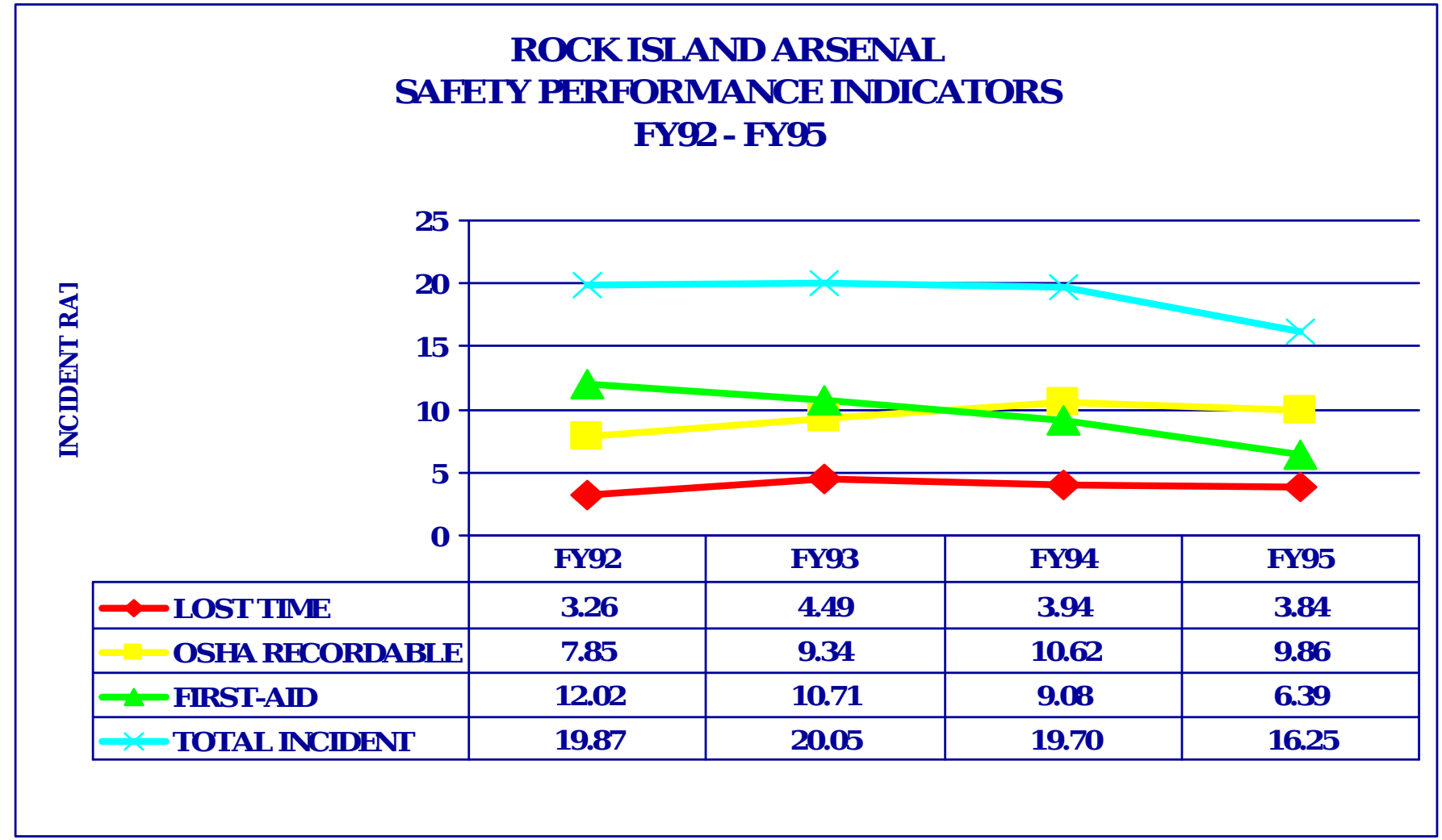
Briefing Agenda

- ✔ Program Justification
- ✔ What is the CISP Program
- ✔ The Intent of the CISP Program
- ✔ The CISP Process
- ✔ Action Plans
- ✔ Expectations of the CISP Program
- ✔ Safety Metrics
- ✔ Safety Performance Profile
- ✔ Accident Investigations
- ✔ Associated Cost
- ✔ Cost Avoidance
- ✔ Cost Per Employee

Program Justification

- ✔ **Analysis of FY 1992 to FY 1995 concluded that:**
  - ➤ **No significant improvements in incident rates.**
  - **Majority of injury experiences were of the more serious type (Lost Time, OSHA Recordable).**
  - **Associated Costs (Medical, COP, Compensation, etc.) would continue to increase.**
- ✔ **Analysis showed the need to refocus on:**
  - **Accountability for Accident Prevention.**
  - **Development of Accident Prevention Strategies.**
  - **Increasing Safety Awareness.**
  - **Increasing Employee Involvement.**
  - **Setting Safety Performance Goals and Objectives.**

Program Justification



	FY92	FY93	FY94	FY95
LOST TIME	3.26	4.49	3.94	3.84
OSHA RECORDABLE	7.85	9.34	10.62	9.86
FIRST-AID	12.02	10.71	9.08	6.39
TOTAL INCIDENT	19.87	20.05	19.70	16.25

What is the CISP Program

- ✔ **Concept: Management By Objective (MBO)**
- ✔ **Approach: Structured and Disciplined**
  - ➤ **Command Support**
  - **Setting Safety Performance Goals**
  - **Identifies Major Problem Areas**
  - **Action Planning (Objectives)**
  - **Accountability for Results**
- ✔ **Results: Continuous Improvement in Safety Performance**

The Intent of the CISP Program

- ✔ **Establishes reasonable, attainable, and measurable safety performance goals at Directorate and Division levels.**
- ✔ **Improves Safety Performance by strengthening accident prevention strategies, before and after the fact.**
- ✔ **The development of Action Plans that specify objectives to meet specific performance goals and defines and assigns accountability for results at all employee levels, management and labor, alike.**
- ✔ **Continuous Improvement in Safety Performance.**

The CISP Process

- ✔ **Preview Previous Years Safety Performance**
- ✔ **Commander's Establishes Goals for FY**
  - ➤ **Incident Rates**
  - **Associated Costs (Medical, COP, Compensation, etc.)**
- ✔ **Development of Safety Performance Profiles**
  - **Directorate / Division / Offices**
- ✔ **Conduct Briefing of Safety Performance Profiles**
  - **Detailed Analysis of Previous Years Incidents**

The CISP Process

- ✔ **Directorate / Division / Offices Assign Accountability for Goals**
  - **Incident Rates / Special Initiatives**
- ✔ **Implement the Action Plan**
- ✔ **Monitor and Evaluate Progress of Action Plan**
  - **Compliance with Implementation**
  - **Assess Safety Performance**
  - **Make Necessary Adjustments**
- ✔ **Reporting Results**
  - **Quarterly Reviews with Commander / Director**
  - **Safety Office provides Monthly Safety Performance Updates**

Action Plans

- ✔ **Directorate / Division Actions Plans:**
  - **Injury / Illness Incident Rates are compatible with Commander's Goals and Objectives.**
  - **<u>Who</u> will be accountable / responsible for implementing the action plan.**
  - **<u>What</u> objectives will be implemented to address problem areas.**
  - **<u>When</u> the objectives will be implemented.**
  - **<u>How</u> the objectives will be measured and monitored to evaluate progress and effectiveness.**
- ✔ **Safety Office will conduct periodic reviews of Action Plans.**

Expectations of the CISP Program

- ✔ **Continuous Improvement in Safety Performance**
  - ➤ **Fewer Employees Injured and Less Severely**
  - **Reduced Incident Rates**
- ✔ **Reduced Current and Future Associated Costs (Medical, COP, Compensation, etc.)**
  - **Positive Impact on Profitability**
  - **Compensation Cost Avoidance**
- ✔ **Increased Accountability for Accident Prevention**
  - **Intervention at the Right Level**

Expectations of the CISP Program

- ✔ **Ability to Successfully Benchmark Against World-Class Organizations**
  - ➤ **Lost Time Frequency Rates Less Than 1**
- ✔ **Increased Productivity and Overall Efficiency**
  - **Improved Reputation**
  - **Increased Competitive Posture**
- ✔ **Reduces Possible Audits from Other Agencies**
  - **OSHA**
- ✔ **Increased Employee Morale**

Definitions

- **Lost Time Injury: A work related injury or illness involving one or more full days away from work beyond the date of occurrence.**
- **OSHA Lost Work Day Case: A work related injury or illness that causes any loss of time from work beyond the day or shift on which it occurred.**
  - **Note: New AMC guidance requires the reporting of this statistic to HQ.**

Definitions

- **<u>OSHA Recordable Injury</u>: All work related injuries and illnesses, and those injuries that result in loss of consciousness, lost workdays (days away from work and/or restricted activity), transfer to another job, or require medical treatment beyond simple first-aid.**

Definitions

- **First-Aid Injury: Any injury one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, that do not ordinarily require medical treatment.**
- **Severity Rate: The number of lost workdays away from work per 200,000 hours worked.**

Safety Metrics

Frequency Rates

Calculating Frequency Rates:

Frequency Rate = (Number of Incidents) x (200,000 Hours)*

Number of Exposure Hours

*** 200,000 Hours = (100 persons) x (2000 Hours) or 1 Man Year**

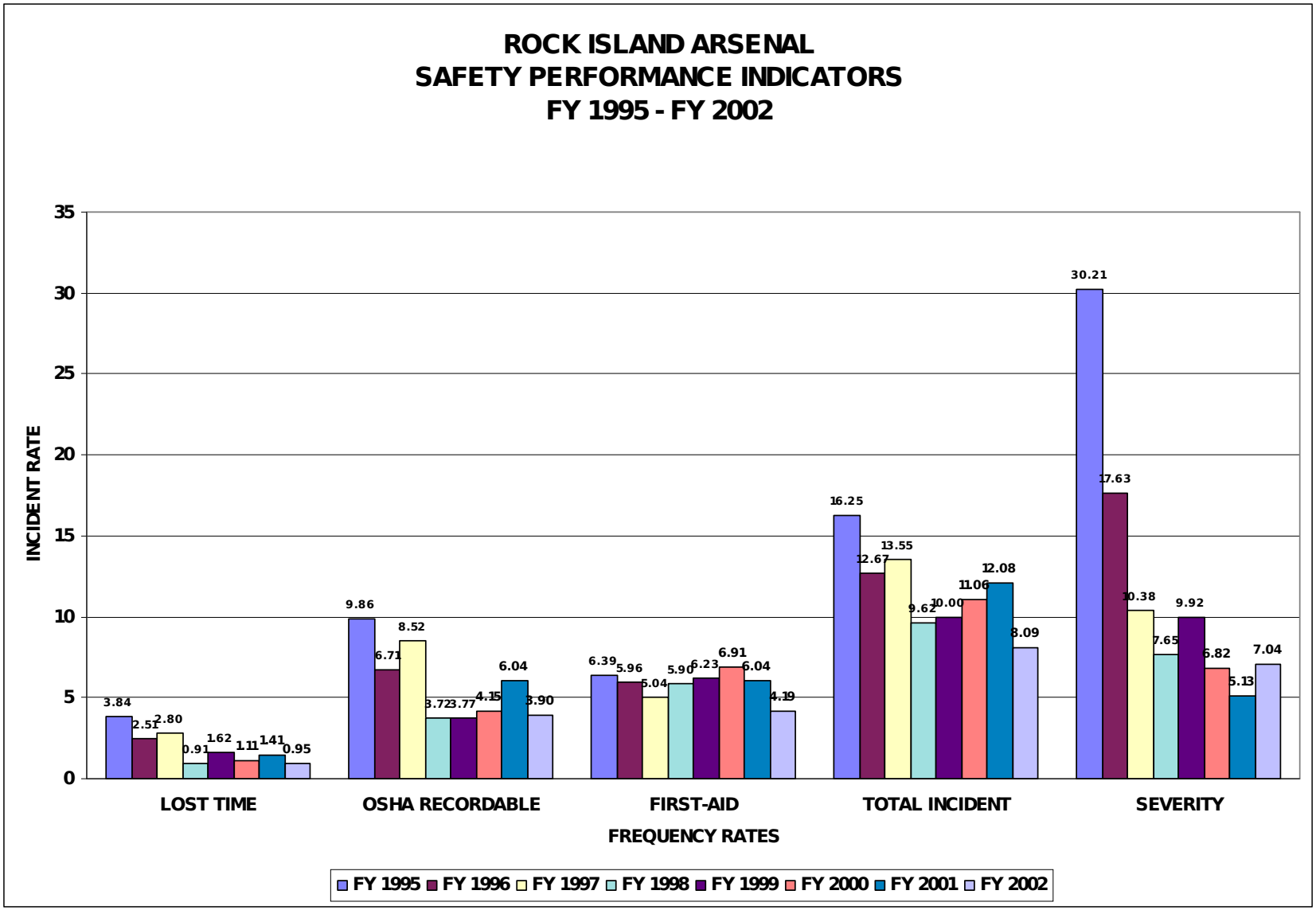
Example: FY 2002 Total Incident Rate

Total Incident Rate = (85) x (200,000 Hours)
2,102,572.7

= 8.09

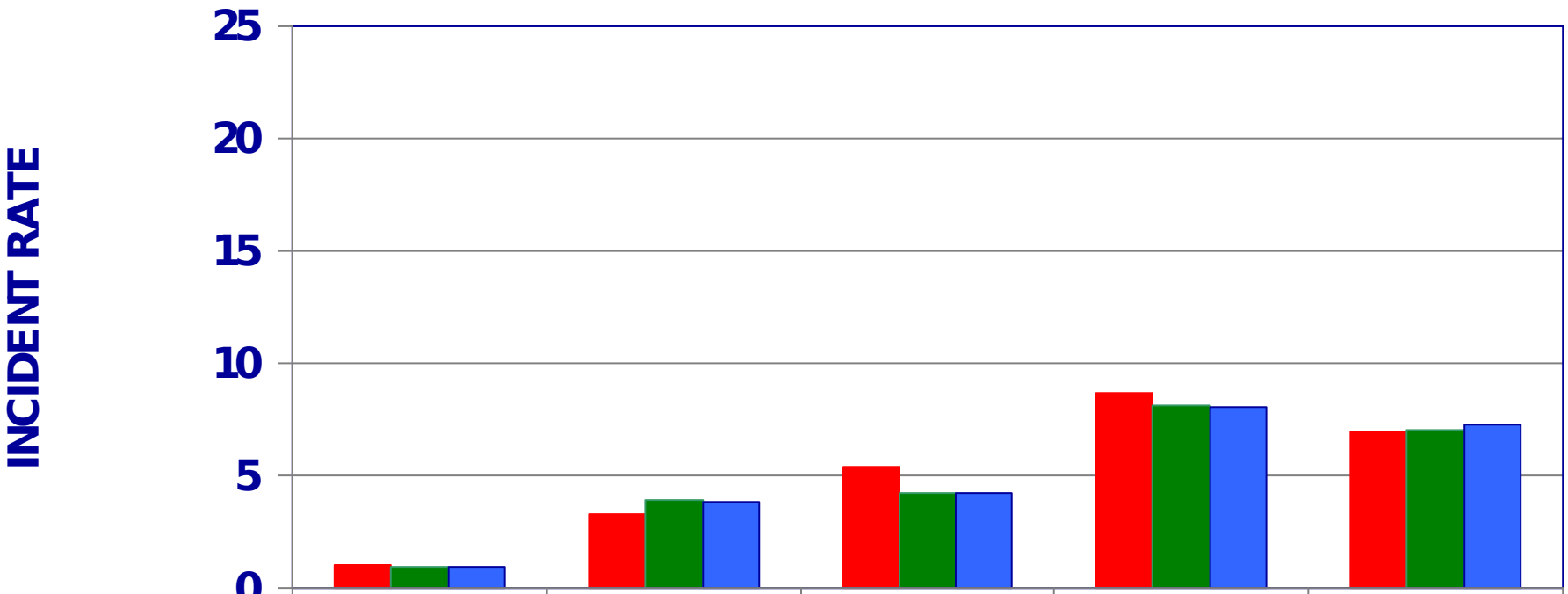
Cases and Frequency Rates

CASES	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
LOST TIME	72	43	45	13	21	12	14	10
OSHA RECORDABLE	185	115	137	53	49	45	60	41
FIRST-AID	120	102	81	84	81	75	60	44
TOTAL	305	217	218	137	130	120	120	85
LOST WORKDAYS	567	302	167	109	129	74	51	74
HOURS OF EXPOSURE	3,753,449	3,425,361	3,217,248	2,848,611	2,600,009	2,169,852	1,986,510	2,102,573
FREQUENCY RATES	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002
LOST TIME	3.84	2.51	2.80	0.91	1.62	1.11	1.41	0.95
OSHA RECORDABLE	9.86	6.71	8.52	3.72	3.77	4.15	6.04	3.90
FIRST-AID	6.39	5.96	5.04	5.90	6.23	6.91	6.04	4.19
TOTAL INCIDENT	16.25	12.67	13.55	9.62	10.00	11.06	12.08	8.09
SEVERITY	30.21	17.63	10.38	7.65	9.92	6.82	5.13	7.04


ROCK ISLAND ARSENAL
SAFETY PERFORMANCE INDICATORS
FY 1995 - FY 2002
INCIDENT RATE
35
30
25
20
15
10
5
0
3.84
2.51
2.80
0.91
1.62
1.11
1.41
0.95
9.86
6.71
8.52
3.72
3.77
4.15
6.04
3.90
6.39
5.96
5.04
5.90
6.23
6.91
6.04
4.19
16.25
12.67
13.55
9.62
10.00
11.06
12.08
8.09
30.21
17.63
10.38
7.65
9.92
6.82
5.13
7.04
LOST TIME
OSHA RECORDABLE
FIRST-AID
TOTAL INCIDENT
SEVERITY
FREQUENCY RATES
FY 1995 FY 1996 FY 1997 FY 1998 FY 1999 FY 2000 FY 2001 FY 2002

RIA SAFETY PERFORMANCE
CEILING vs YTD vs AVERAGE
YTD SEP FY 2002

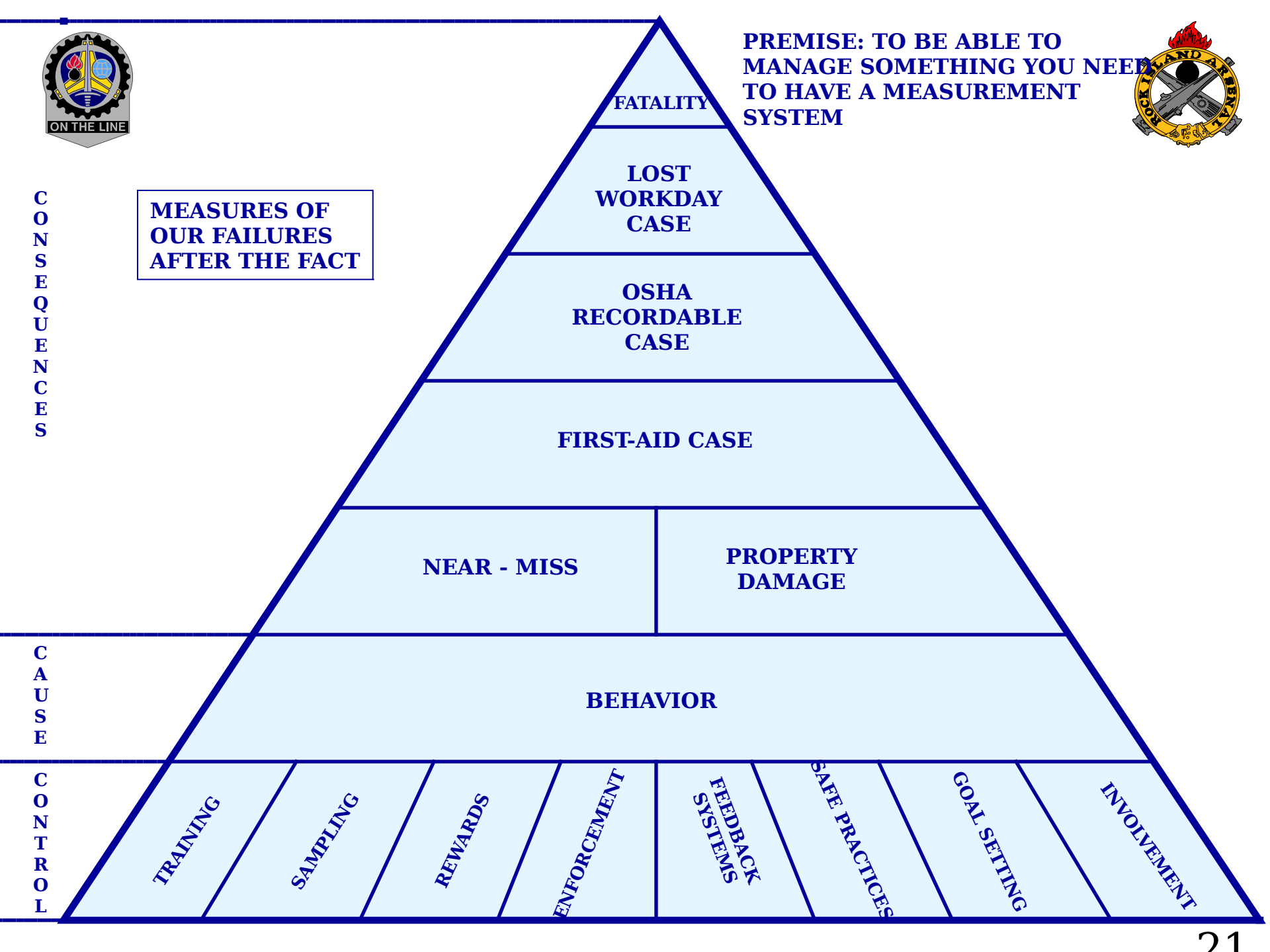
Status: Green



	LOST TIME	OSHA RECORDABLE	FIRST-AID	TOTAL INCIDENT	SEVERITY
CEILING	1.03	3.28	5.36	8.64	6.96
YTD	0.95	3.90	4.19	8.09	7.04
12 MONTH	0.95	3.84	4.18	8.03	7.27

Cases by Office Symbol

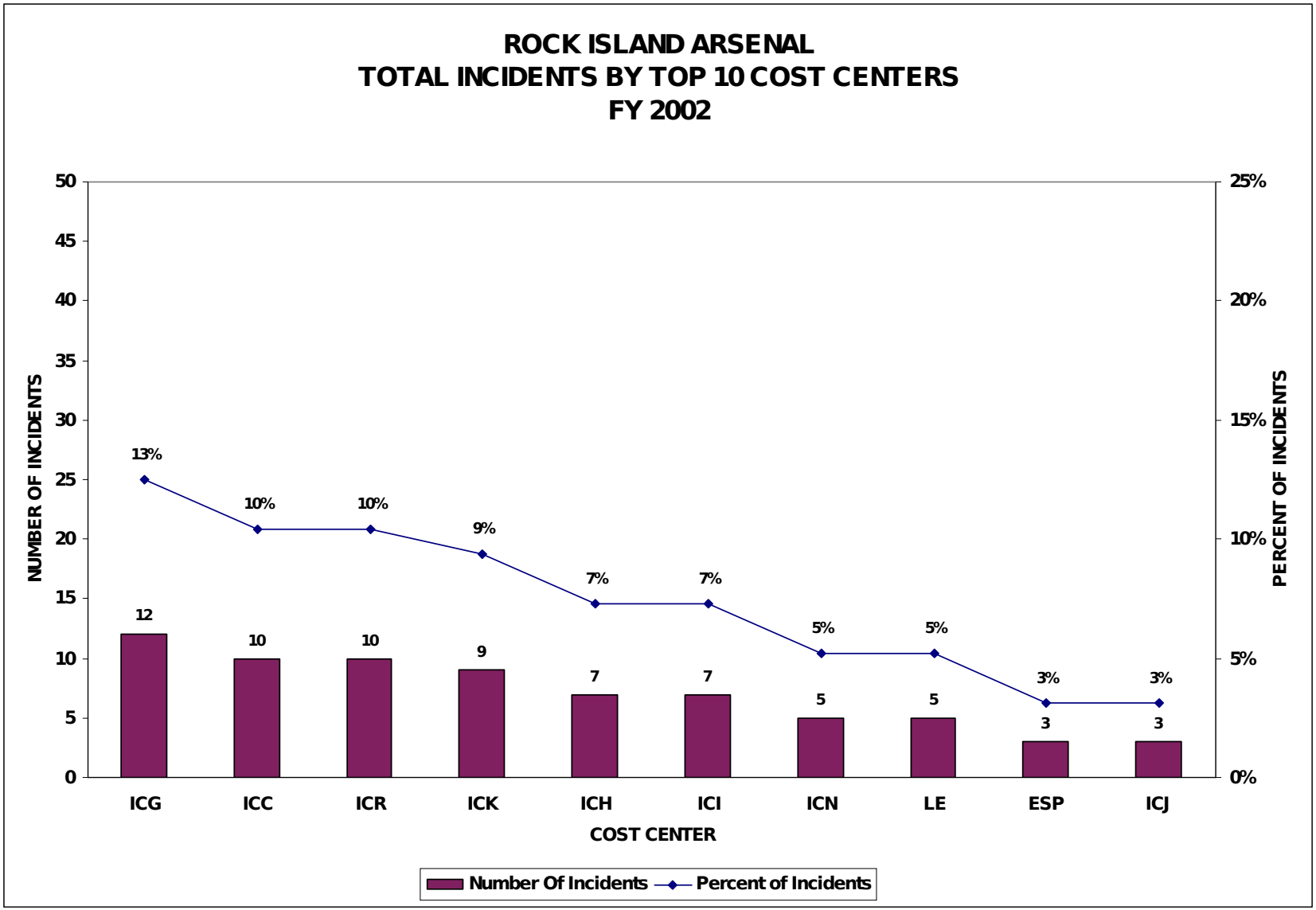
OFFICE	LOST TIME	OSHA	FIRST AID	TOTAL	LOST WORKDAYS
RIA	10	41	44	85	74
CO	0	0	0	0	0
HD	0	0	0	0	0
GC	0	0	1	1	0
IA	0	0	0	0	0
CA	0	0	0	0	0
EO	0	0	0	0	0
SF	0	0	0	0	0
QM	0	0	0	0	0
RM	0	0	0	0	0
CT	1	1	0	1	32
PW	2	2	1	3	2
PC	0	0	0	0	0
LE	0	3	3	6	0
SM	0	0	1	1	0
IC	7	34	36	70	40
ES	0	0	2	2	0
IT	0	1	0	1	0
AP	0	0	0	0	0
CF	0	0	0	0	0

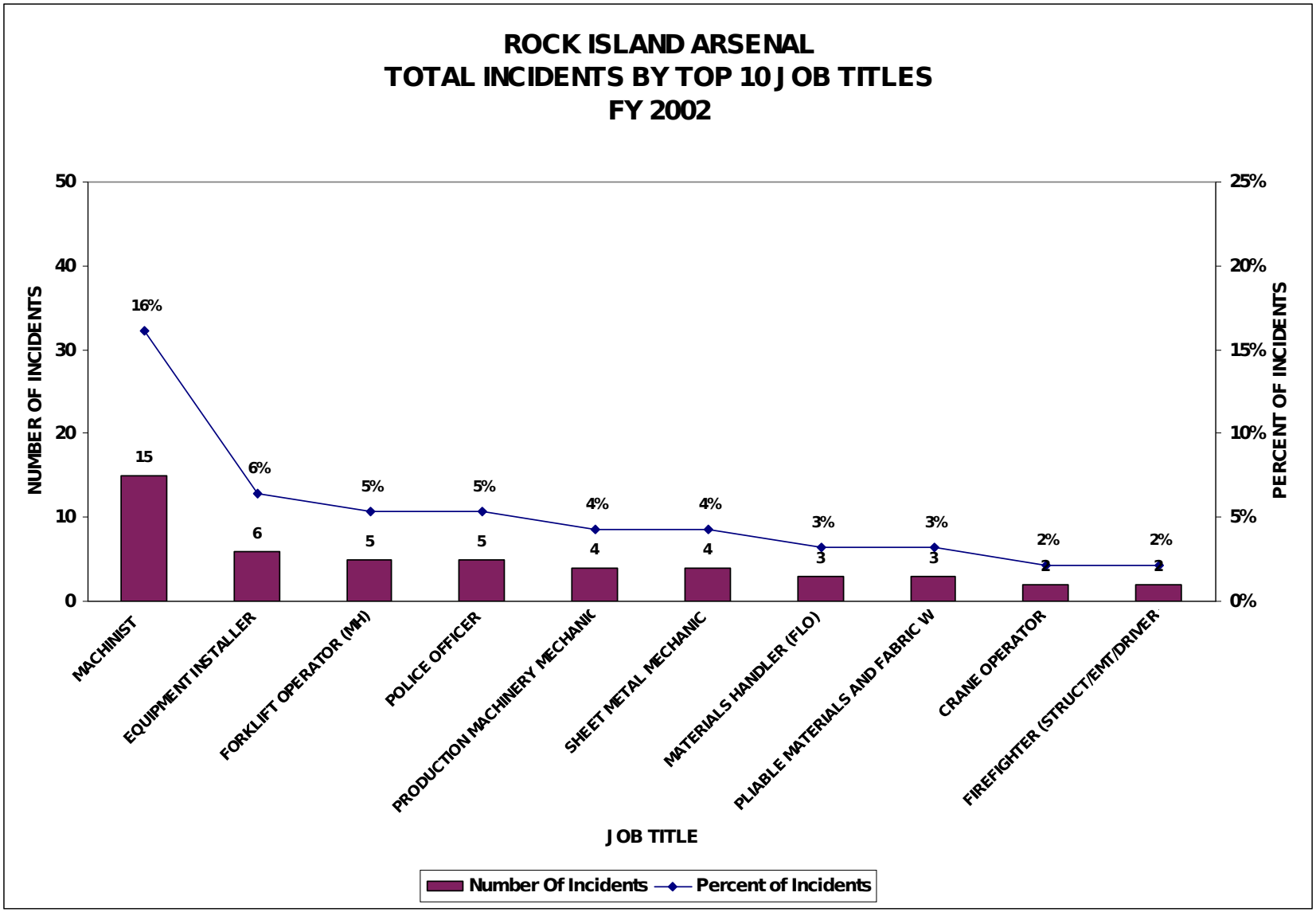

PREMISE: TO BE ABLE TO MANAGE SOMETHING YOU NEED TO HAVE A MEASUREMENT SYSTEM
ON THE LINE
ROCK ISLAND ARSENAL
MEASURES OF OUR FAILURES AFTER THE FACT
CONSEQUENCES
FATALITY
LOST WORKDAY CASE
OSHA RECORDABLE CASE
FIRST-AID CASE
NEAR - MISS
PROPERTY DAMAGE
CAUSE
BEHAVIOR
CONTROL
TRAINING
SAMPLING
REWARDS
ENFORCEMENT
FEEDBACK SYSTEMS
SAFE PRACTICES
GOAL SETTING
INVOLVEMENT

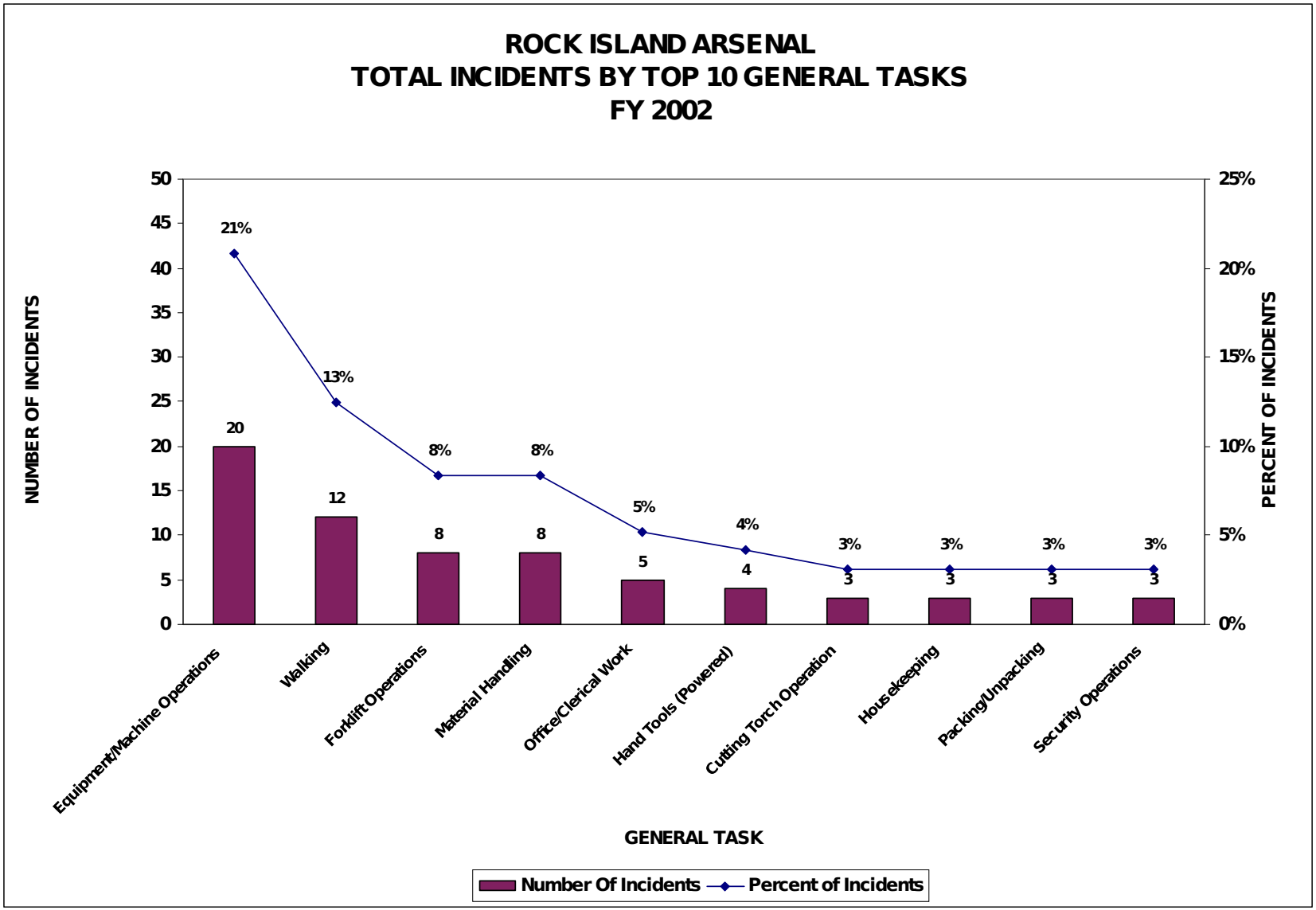
Safety Performance Profile

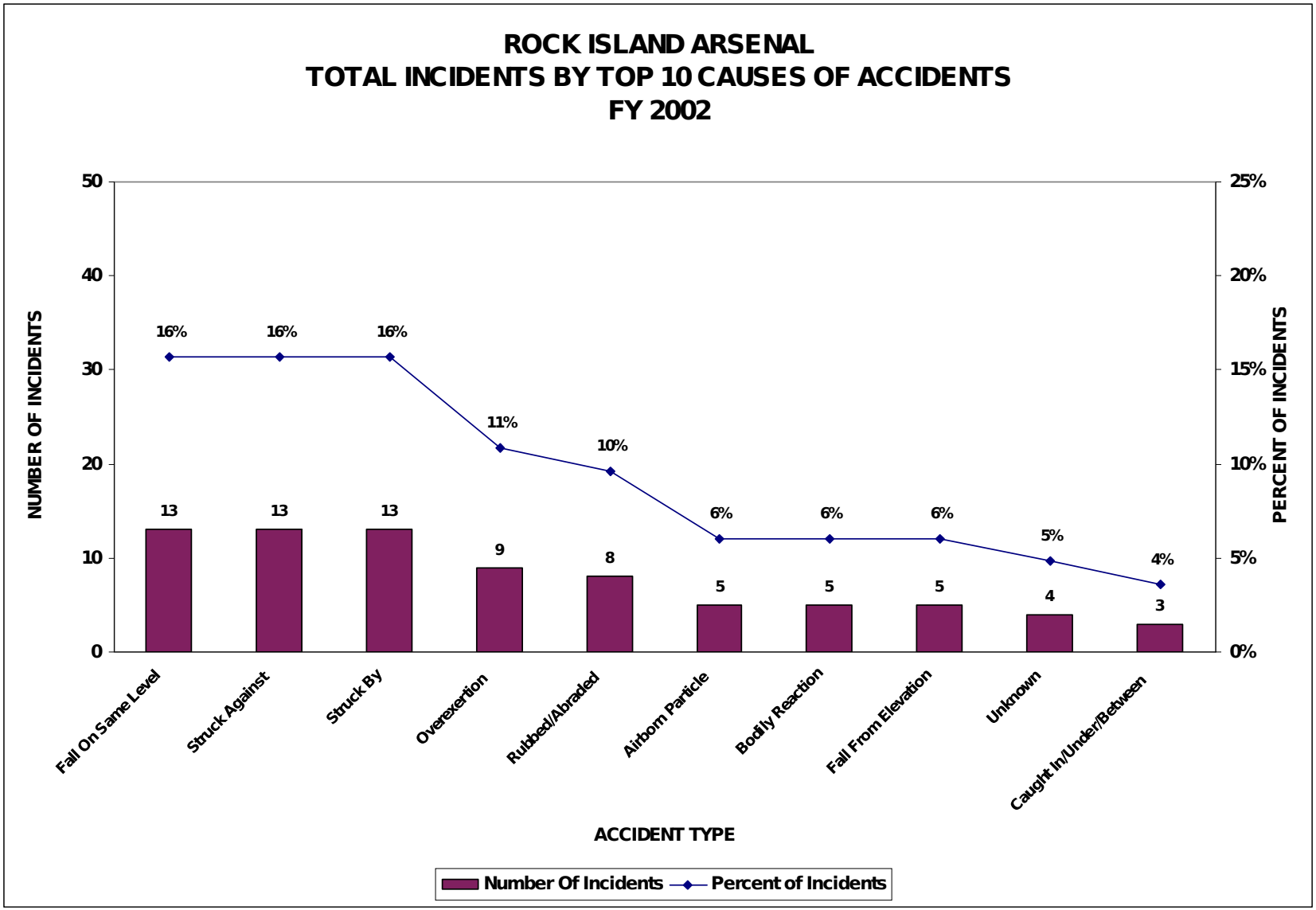
Current Safety Performance

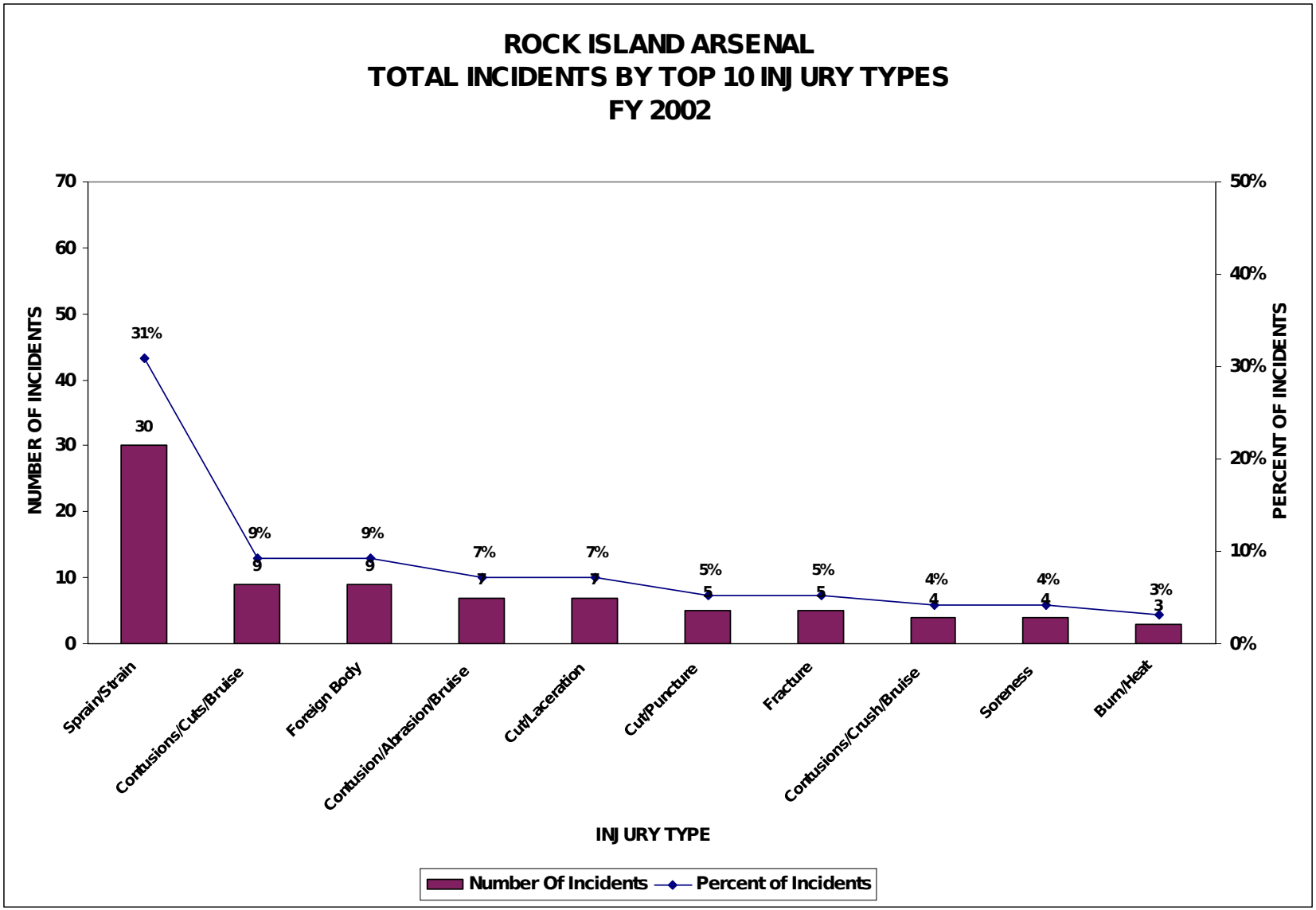
- ✔ **RIA Safety Performance Profile**
  - ➤ **Analysis by Top 10:**
    - **Cost Centers**
    - **Job Titles**
    - **General Tasks**
    - **Accident Types**
    - **Injury Types**
    - **Body Parts**
    - **Injury Sources**
    - **General Location**
    - **Time of Day**

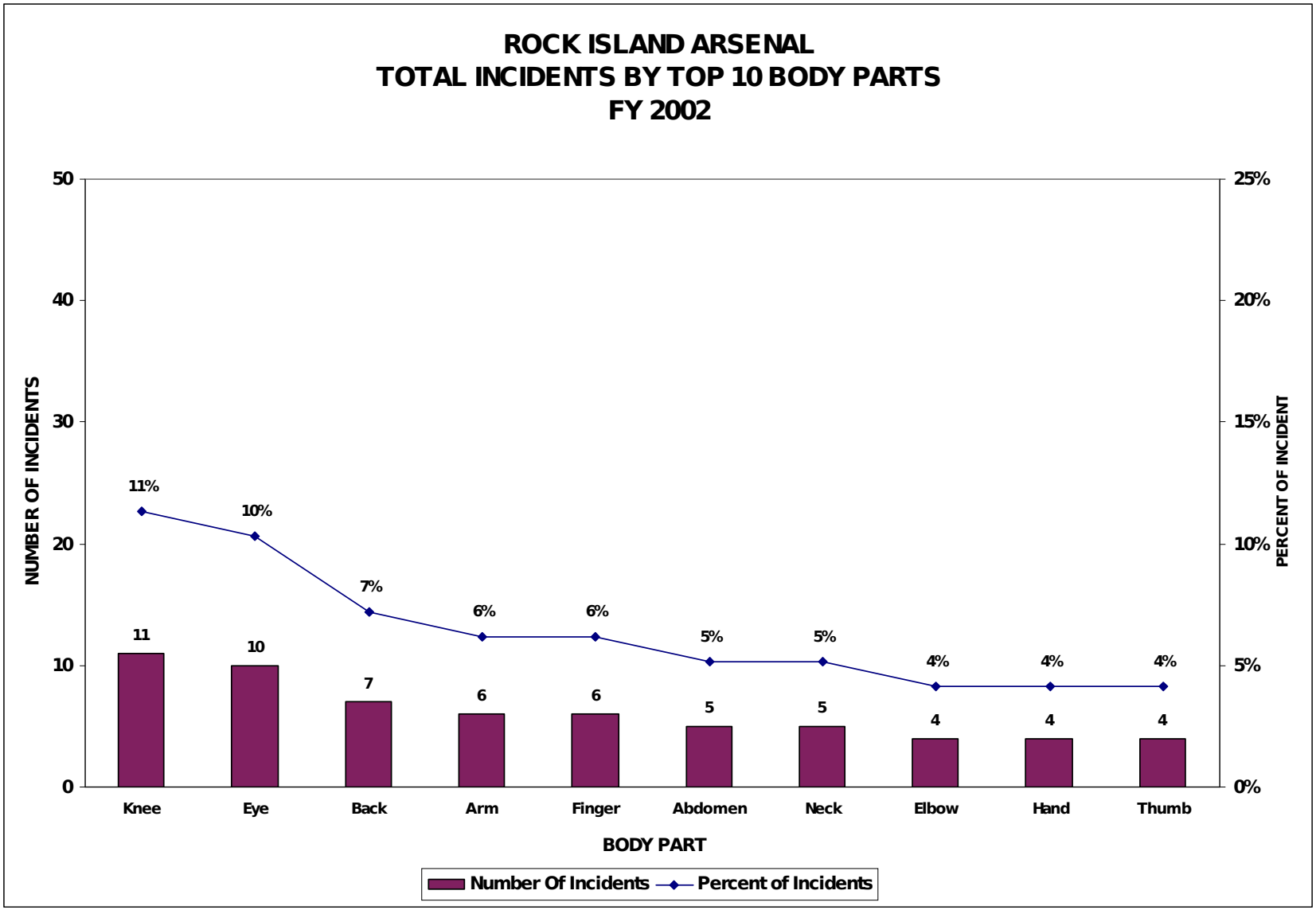

ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 COST CENTERS
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENTS
50
45
40
35
30
25
20
15
10
5
0
25%
20%
15%
10%
5%
0%
13%
10%
10%
9%
7%
7%
5%
5%
3%
3%
12
10
10
9
7
7
5
5
3
3
ICG
ICC
ICR
ICK
ICH
ICI
ICN
LE
ESP
ICJ
COST CENTER
Number Of Incidents
Percent of Incidents

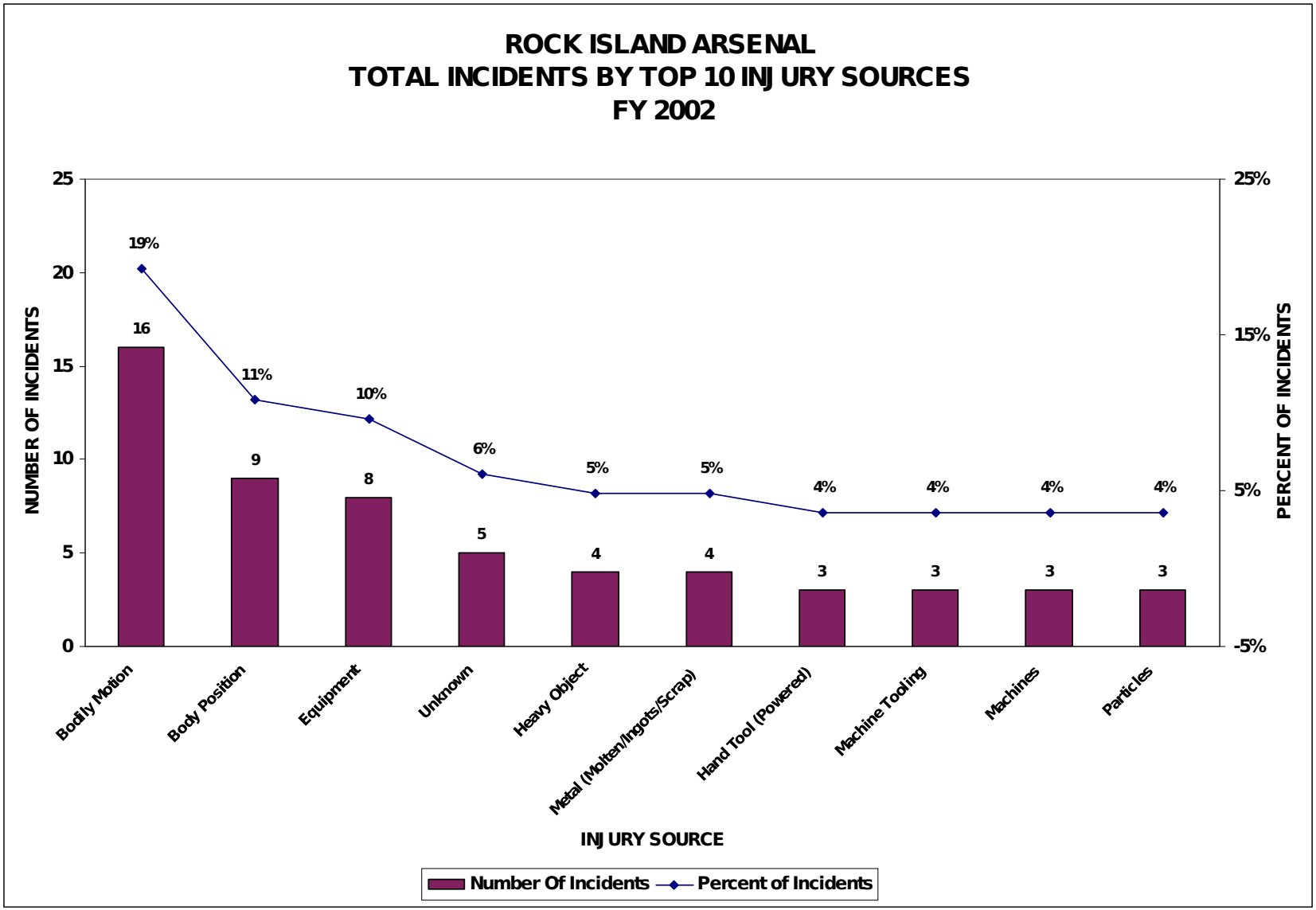

ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 JOB TITLES
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENTS
50
40
30
20
10
0
25%
20%
15%
10%
5%
0%
16%
6%
5%
5%
4%
4%
3%
3%
2%
2%
15
6
5
5
4
4
3
3
2
2
MACHINIST
EQUIPMENT INSTALLER
FORKLIFT OPERATOR (MH)
POLICE OFFICER
PRODUCTION MACHINERY MECHANIC
SHEET METAL MECHANIC
MATERIALS HANDLER (FLO)
PLIABLE MATERIALS AND FABRIC W
CRANE OPERATOR
FIREFIGHTER (STRUCT/EMT/DRIVER
JOB TITLE
Number Of Incidents
Percent of Incidents

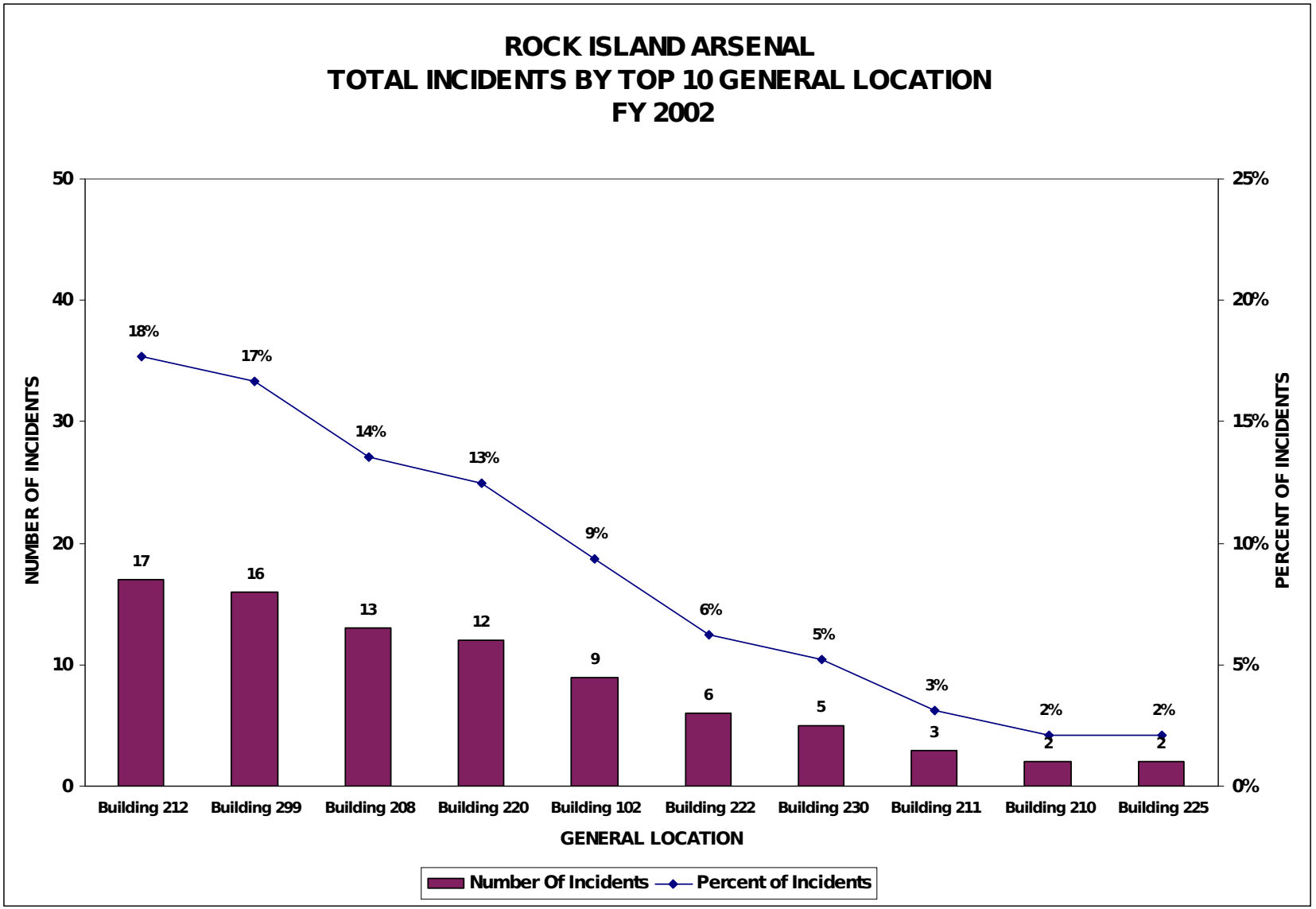

ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 GENERAL TASKS
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENTS
50
45
40
35
30
25
20
15
10
5
0
25%
20%
15%
10%
5%
0%
21%
13%
8%
8%
5%
4%
3%
3%
3%
3%
20
12
8
8
5
4
3
3
3
3
Equipment/Machine Operations
Walking
Forklift Operations
Material Handling
Office/Clerical Work
Hand Tools (Powered)
Cutting Torch Operation
Housekeeping
Packing/Unpacking
Security Operations
GENERAL TASK
Number Of Incidents
Percent of Incidents

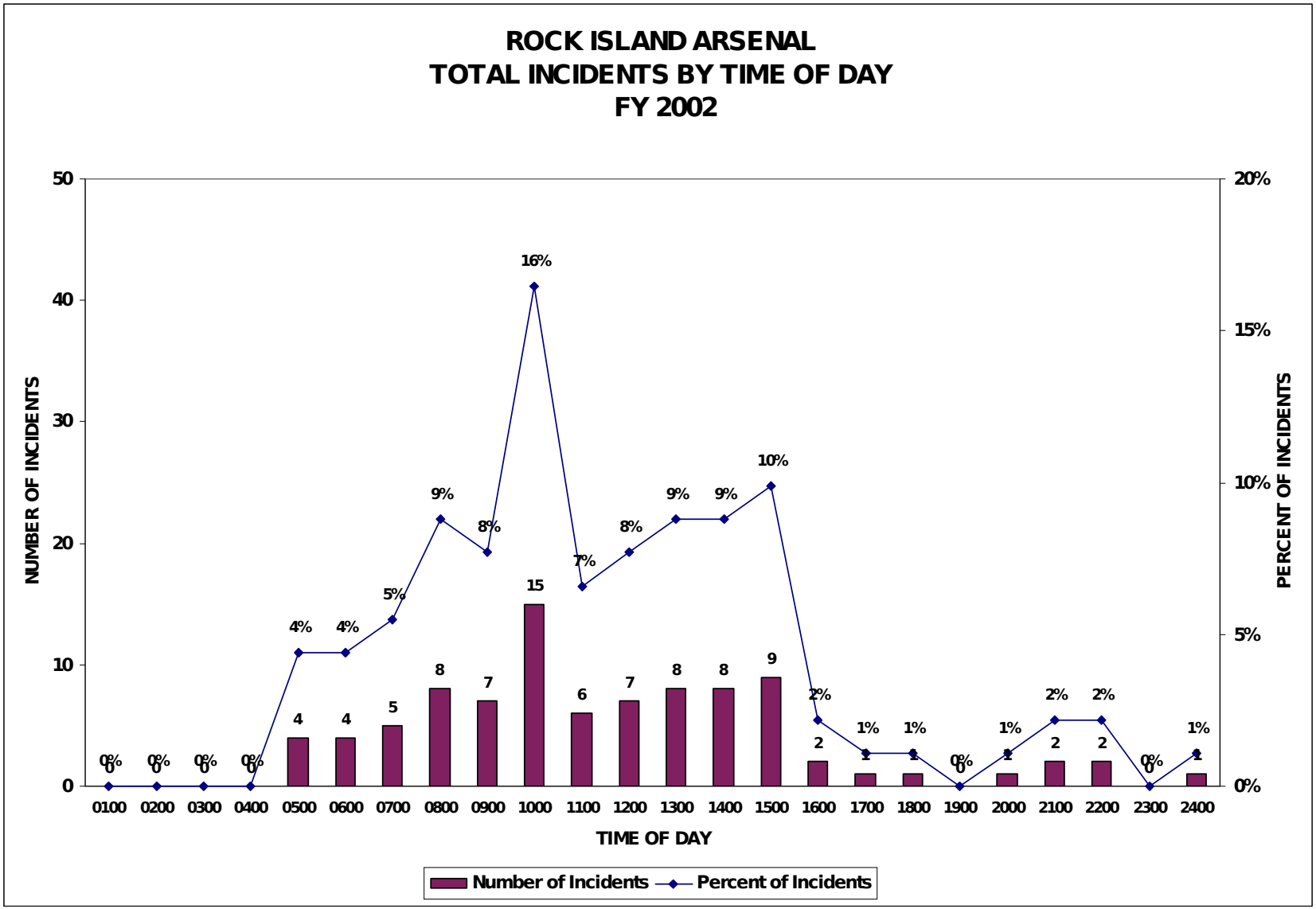

ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 CAUSES OF ACCIDENTS
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENTS
50
40
30
20
10
0
25%
20%
15%
10%
5%
0%
16%
16%
16%
11%
10%
6%
6%
6%
5%
4%
13
13
13
9
8
5
5
5
4
3
Fall On Same Level
Struck Against
Struck By
Overexertion
Rubbed/Abraded
Airborn Particle
Bodily Reaction
Fall From Elevation
Unknown
Caught In/Under/Between
ACCIDENT TYPE
Number Of Incidents
Percent of Incidents


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 INJURY TYPES
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENTS
INJURY TYPE
Number Of Incidents
Percent of Incidents
Sprain/Strain
Contusions/Cuts/Bruise
Foreign Body
Contusion/Abrasion/Bruise
Cut/Laceration
Cut/Puncture
Fracture
Contusions/Crush/Bruise
Soreness
Burn/Heat
31%
9%
9%
7%
7%
5%
5%
4%
4%
3%
30
9
9
7
7
5
5
4
4
3


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 BODY PARTS
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENT
50
40
30
20
10
0
25%
20%
15%
10%
5%
0%
11%
10%
7%
6%
6%
5%
5%
4%
4%
4%
11
10
7
6
6
5
5
4
4
4
Knee
Eye
Back
Arm
Finger
Abdomen
Neck
Elbow
Hand
Thumb
BODY PART
Number Of Incidents
Percent of Incidents


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 INJURY SOURCES
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENTS
INJURY SOURCE
Bodily Motion
Body Position
Equipment
Unknown
Heavy Object
Metal (Molten/Ingots/Scrap)
Hand Tool (Powered)
Machine Tooling
Machines
Particles
16
9
8
5
4
4
3
3
3
3
19%
11%
10%
6%
5%
5%
4%
4%
4%
4%
Number Of Incidents
Percent of Incidents


ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TOP 10 GENERAL LOCATION
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENTS
50
40
30
20
10
0
25%
20%
15%
10%
5%
0%
18%
17%
14%
13%
9%
6%
5%
3%
2%
2%
17
16
13
12
9
6
5
3
2
2
Building 212
Building 299
Building 208
Building 220
Building 102
Building 222
Building 230
Building 211
Building 210
Building 225
GENERAL LOCATION
Number Of Incidents
Percent of Incidents

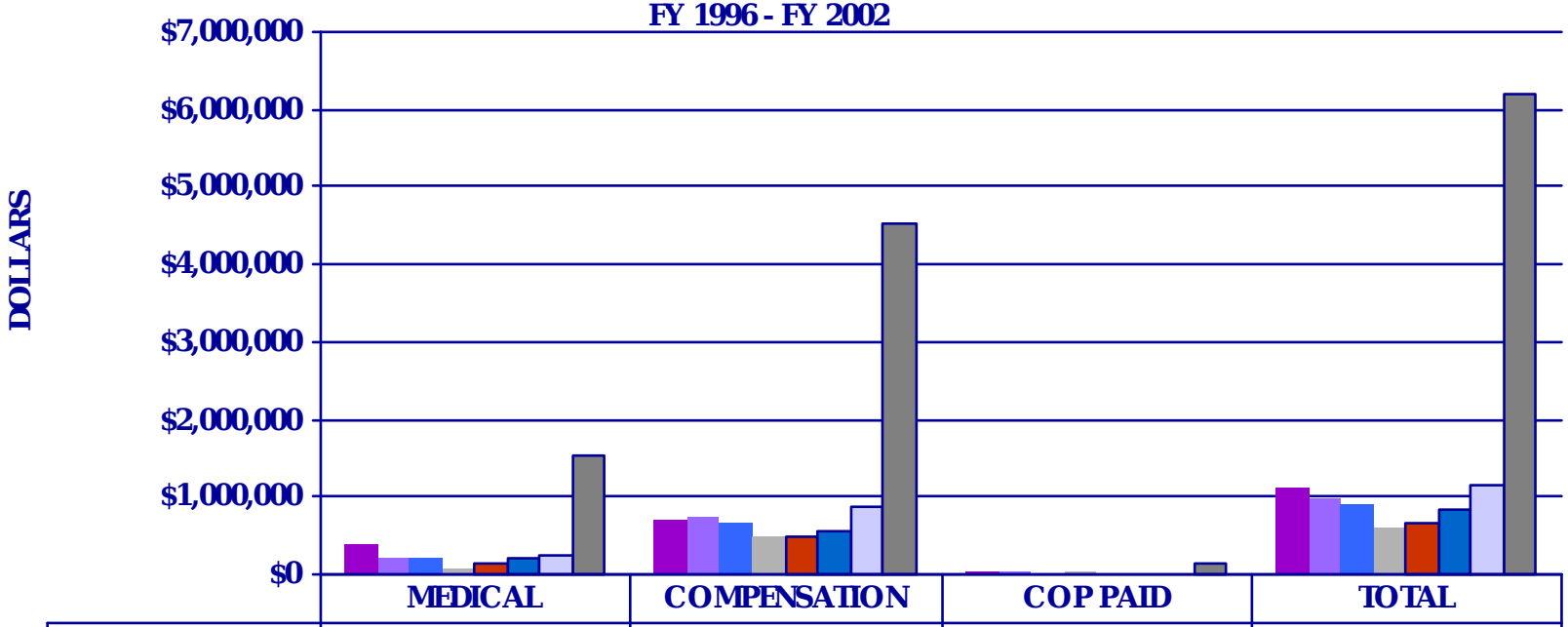

ROCK ISLAND ARSENAL
TOTAL INCIDENTS BY TIME OF DAY
FY 2002
NUMBER OF INCIDENTS
PERCENT OF INCIDENTS
TIME OF DAY
0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400
0 0 0 0 4 4 5 8 7 15 6 7 8 8 9 2 1 1 0 1 2 2 0 1
0% 0% 0% 0% 4% 4% 5% 9% 8% 16% 7% 8% 9% 9% 10% 2% 1% 1% 0% 1% 2% 2% 0% 1%
Number of Incidents
Percent of Incidents

Accident Investigation

- **Commander Sets Policy on Conducting Accident Investigations.**
  - **All policies are formal and written.**
  - **Accidents are reported within 2 hours of the occurrence.**
  - **Accidents are investigated with 72 hours of the occurrence.**
  - **Safety After Accident Review (SAAR) Accident Investigation Report is completed for incident and forwarded.**
  - **SMCRI Form 60, Employee Dispensary and Status Form, shall be completed for all incidents requiring treatment at RIA Health Clinic.**

"All accidents, no matter how minor they appear, shall be reported and investigated according to established policies and procedures."

Associated Cost



	MEDICAL	COMPENSATION	COP PAID	TOTAL
FY96	$372,365	$700,460	$24,767	$1,097,591
FY97	$225,005	$721,323	$32,069	$978,397
FY98	$214,058	$668,587	$6,970	$889,615
FY99	$79,867	$496,298	$27,297	$603,462
FY00	$150,208	$496,802	$15,033	$662,042
FY01	$225,977	$560,713	$14,963	$831,653
FY02	$236,832	$887,917	$16,934	$1,141,683
ACCUMULATED	$1,534,312	$4,532,100	$138,531	$6,204,943

Cost Avoidance

Calculating Cost Avoidance:

Cost Avoidance = [(Base Year Lost Time Rate / Current Year Lost Time Rate) x (Current Year Total Cost)] - (Total Cost)

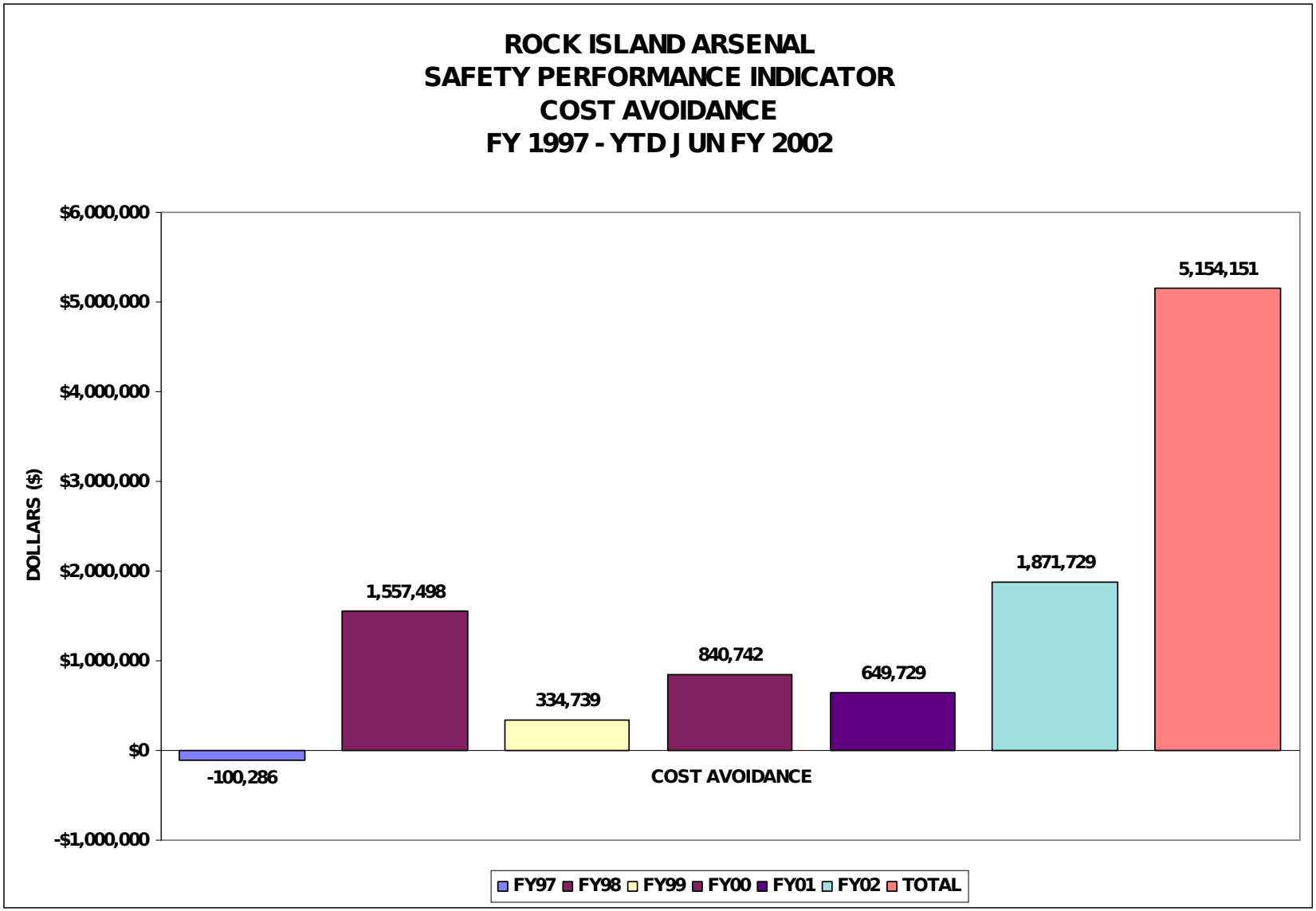
Example: Calculating FY02 Cost Avoidance using FY96 Lost Time Rate as the Base Year Lost Time Rate.

Cost Avoidance = [(2.51/0.95) x $ 1,141,682.60] - $ 1,141,682.60

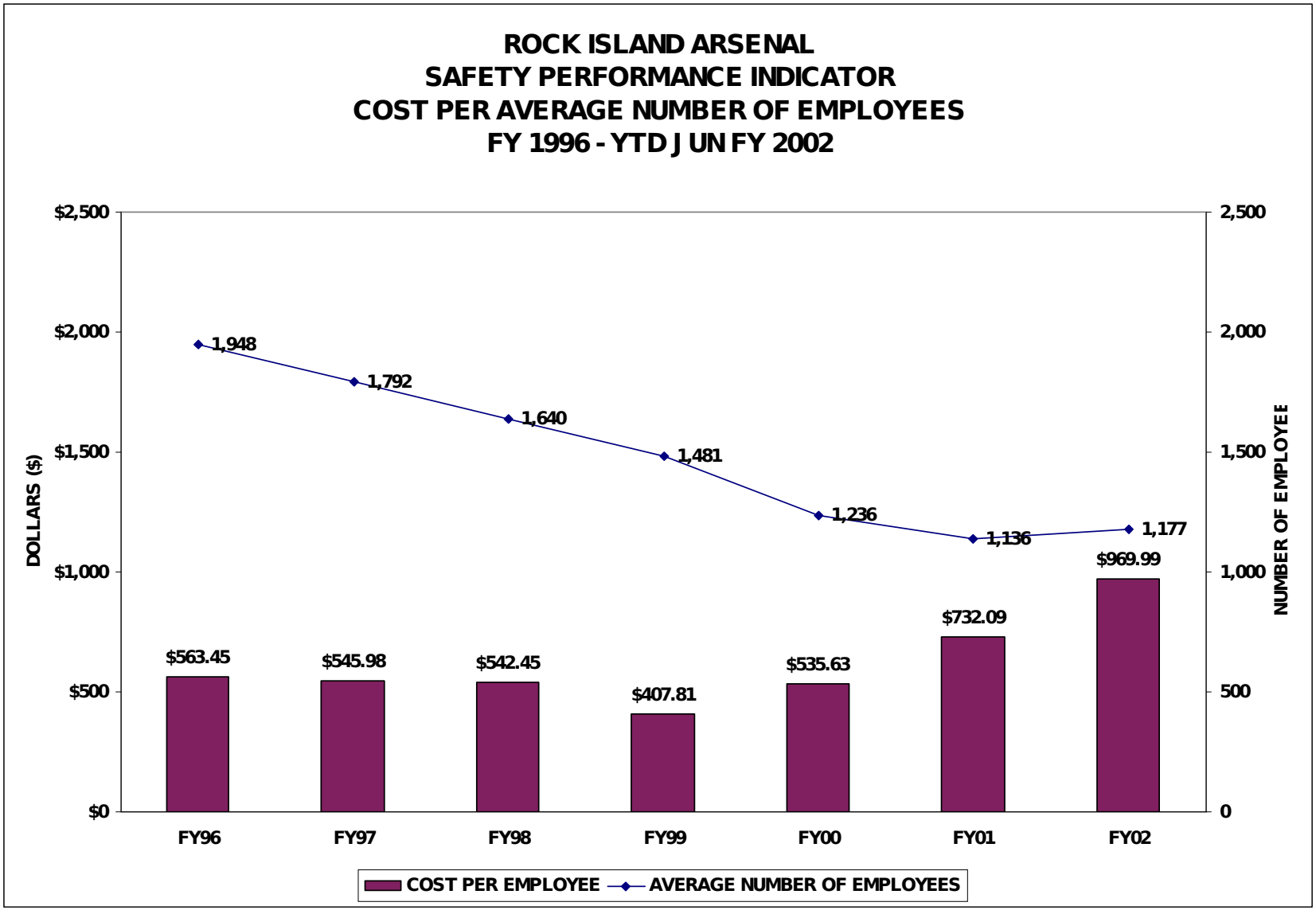
= $ 1,871,729.38

Note: Lost Time Rate is the best indicator for

Cost Avoidance



Cost Per Employee



ON THE LINE
ROCK ISLAND ARSENAL
ROCK ISLAND ARSENAL
CENTER FOR EXCELLENCE